

REMARKS

The application has been reviewed in light of the Office Action dated June 2, 2005. Claims 1-13 and 15-40 are pending, with claims 1, 2 and 13 being in independent form. Claim 14 was previously canceled, without prejudice. The Office Action states that claims 2-12 and 32-36 are allowed. By this Amendment, claims 1 and 13 have been amended to clarify the claimed invention.

Claims 1, 13, 15, 16, 25 and 37-40 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable by U.S. Patent No. 5,999,220 to Washino in view of U.S. Patent No. 5,808,628 to Hinson et al. (Hinson '628). Claims 17-23 and 27-29 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Washino in view of Hinson and further in view of U.S. Patent No. 4,963,995 to Lang.

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1 and 13 are patentable over the cited art, for at least the following reasons.

This application relates to editing systems for moving images. In many instances, source video material is in a format (such as film) other than the target format, and/or needs to be prepared or edited for multiple standards (such as NTSC, PAL, etc.) which have different frame rates and different lines per frame. Although the source material can be converted to the target format, once it is converted from film to NTSC format or PAL format, it is not easy to convert the program to the other format. Therefore, the process of conversion followed by editing is often repeated for each format (for example, NTSC and PAL). However, the edits for one format cannot simply be repeated to achieve identical effects for the other format.

The present application is directed to improvements to editing systems wherein source

material (image data representing a sequence of image frames which together form a moving image) is stored in a frame-random access store in an input format as captured (also known as a native format), to preserve quality, and yet allowing it to be edited with data of other formats and output in another format as desired, in a single apparatus. The input format is defined by frame rate and a multiplicity of image lines. Each of independent claims 1 and 13 includes these features.

Washino, as understood by Applicant, is directed to a multi-format audio/video production system wherein all incoming data, whatever its format, is converted into a common internal production format (having a predetermined, associated image size and frame rate) upon input into the system. Thus, inputs from multiple different acceptable input formats are expressly converted to the specific internal production format. See, for example, Washino at page 3, lines 9 to 17 and page 5, line 8 to page 7, line 28, and particularly in the paragraph bridging pages 6 and 7 and the claims. The entire principle advocated in Washino is focused on having a disk system with a single internal “production” format. All inputs are converted to this production format, even if the data is later to be output in the same format as the input format.

In contrast, the claimed invention of claims 1 and 13 provides for storage of inputs from multiple different acceptable input formats each in its own native format. In other words, all input video data are stored “native”, i.e. in its own original format (frame rate and image size and without compression). This avoids unnecessary format conversions in the event that the output format matches the input format and reduces the number of format conversions when there is no such match, thereby improving the quality of the output in any format, since any format conversion, even if it is only a minor resize, will cause degradation of the image.

Contrary to the contention in the Office Action, a skilled artisan at the time of the present

invention would have modified Washino by dropping the compression and increasing the resolution of the single production format, to improve the quality of the outputs provided by Washino.

In contrast to Washino or the obvious modification of Washino, the claimed invention of claim 1 and 13 provides a video editing system enabling input material to be stored "native" in the store, (i.e. of its original frame and line rates) and video data to be freely edited with other material stored native in its own format, which may be different, and the result to be output at any desired standard by resizing each frame to the desired standard as it is output, and thereby obtains the capability to record inputs having multiple different formats and to play out with multiple different formats, where the playout format might not match any input format in either frame rate or size. As stated above, the native storage improves the quality of the output data by reducing the number of format conversions. In the event that the output and the input format matches, no format conversion is required.

It is noted that this is not the case in the system of Washino, wherein the data are, on input, always converted to the internal production format and on output converted back to the input format if the output format and the input format are the same.

As an added example of the benefit of "native" storage, imagine that a high definition (HD) source frame is included as part of a composite standard definition (SD) result frame, with the source HD resized such that the HD source pixels are more or less mapped one to one with the SD result pixels. The visible portion of the HD source image in the result will show much more original detail than if it had been downsized to a common SD "production format" on input and upsized again for the SD composite.

A principal benefit of the claimed invention of claims 1 and 13 over Washino is that

that this is not the case in the system of Washino wherein the data are

generally Washino requires two format conversions (on input and output) while the system of claim 1 or 13 performs operations with one (on output only). In the particular case of matching input and output formats (whatever they are) the system of claim 1 or 13 provides no format conversions at all while in general Washino will continue to require two. This will result in a loss of quality in the Washino output compared to that of the system of claim 1 or 13.

Applicants do not find teaching or suggestion in Washino of an editing system wherein image data representing a moving image input in a first format, defining a first frame rate and a first multiplicity of image lines, at a corresponding rate is stored in a store in the first format as captured (that is, in the native format), are edited, and then can be converted to an output format as required, as provided by the claimed invention of claim 1 or claim 13 of this application.

Hinson '628 is directed to an electronic video processing system including means for combining multiple video clips and making changes to the combination, without committing the combination to the video store. Hinson '628 was cited for its disclosure of use of a random storage means.

Lang, as understood by Applicant, is directed to an audio/video transceiver apparatus including a capability for editing and/or copying from one video tape to another. Lang was cited for its disclosure of an editing apparatus comprising a VTR for receiving and storing the edited data on videotape.

Applicant simply does not find disclosure or suggestion in the cited art, however, of an editing system (such as described in claim 1 or claim 13) wherein image data representing a moving image input in a first format, defining a first frame rate and a first multiplicity of image lines, at a corresponding rate is stored in a store in the first format as captured (that is, in the native format), are edited, and then can be converted to an output format as required.

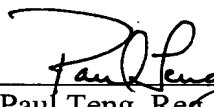
Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1 and 13, and the claims depending therefrom, are patentable over the cited art.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

  
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